

Patent
10007744-1

COMPLETE SET OF PENDING CLAIMS

1. (Previously Presented) A method of etching a substrate surface, comprising the steps of:

masking a first portion of the substrate surface with passivation material having edges that define boundaries on the substrate surface such that within the boundaries a second surface portion is exposed for etching;

depositing a metal layer over the passivation material; and then etching the second surface portion.

2. (Original) The method of claim 1 wherein the masking step includes depositing a layer of silicon nitride on the substrate surface and then depositing on the silicon nitride a layer of silicon carbide.

3. (Previously Presented) A method of etching a portion of a substrate surface, comprising the steps of:

masking the surface with passivation material having edges that define boundaries of the surface portion such that within the boundaries the surface portion is exposed for etching;

depositing a metal layer over the passivation material; and then etching the surface portion; and

fabricating on the substrate drop generator layers that provide for controlled expulsion of liquid from the substrate, and wherein the step of masking with the passivation material includes the simultaneous deposition of the passivation material at a location away from the exposed surface portion to enable use of some of the passivation material as one of the drop generator layers as well as the mask.

4. (Previously Presented) The method of claim 1 including the step of underlying the passivation material with a layer of phosphosilicate glass at locations near the boundaries.

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5. (Previously Presented) A method of etching a substrate surface, comprising the steps of:

fabricating on the substrate drop generator layers that provide for controlled expulsion of liquid from the substrate;

masking a first portion of the substrate surface with passivation material having edges that define boundaries on the substrate surface such that within the boundaries a second surface portion is exposed for etching;

depositing a metal layer over the passivation material; and then

etching the second surface portion;

wherein the step of covering the passivation material with the metal layer includes the simultaneous deposition of the metal layer at a location away from the exposed surface portion to enable use of some of that metal layer as one of the drop generator layers.

6. (Previously Presented) A method of masking and etching a surface of a silicon substrate, comprising the steps of:

providing on the substrate surface an oxide layer in a pattern having edges that define boundaries of a surface portion such that within and adjacent to the boundaries the surface portion is exposed for etching;

covering the oxide layer near the edges with passivation material; and

etching the entire surface portion of the silicon substrate that is exposed for etching.

7. (Original) The method of claim 6 including the step of patterning some of the oxide layer to define a part of a transistor gate carried by the substrate.

8. (Original) The method of claim 6 including the step of covering the edges of the oxide layer with passivation material.

9. (Original) The method of claim 6 including the step of temporarily covering the surface portion of the substrate with a layer of phosphosilicate glass that is removed before etching of the surface portion.

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10. (Original) The method of claim 6 wherein the substrate carries a heat transducer and wherein the step of covering the oxide layer with passivation material includes covering the heat transducer with passivation material.

11. (Currently Amended) A method of fabricating multiple layers of a thermal inkjet printhead that includes a substrate and a trench for moving ink across the substrate, as well as drop generator components for ejecting drops of ink from the substrate, comprising the steps of:

providing on the substrate a layer to serve both as a drop generator component and as a mask to define the trench for etching; and then

etching the substrate to form the trench in the substrate,

wherein the trench extends from a surface of the substrate on which the layer is provided only part of the way through the substrate and a slot extends from the trench into the substrate.

12. (Original) The method of claim 11 wherein the providing step includes growing a layer of oxide to serve as a transistor gate component of the drop generator as well as the mask.

13. (Previously Presented) The method of claim 12 including the step of capping the oxide layer near the trench with a layer of passivation material.

14. (Original) The method of claim 11 wherein the providing step comprises depositing a layer of passivation material to serve as both a drop generator component and the mask.

15-20. (Canceled)

21. (Previously Presented) The method of claim 1 wherein the masking step includes depositing the passivation material on the substrate surface.

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22. (Previously Presented) The method of claim 21 including the step of etching the second portion while the passivation material is on the substrate surface, wherein etching the second portion causes the formation of a trench having angled side walls.

23. (Previously Presented) A method of etching a substrate surface comprising:
depositing a passivation material on a first portion of the substrate surface and subsequently removing a portion of the deposited passivation material from a second portion of the substrate surface within the first portion, such that the second portion is free of passivation material;
depositing a metal layer over the passivation material; and
etching the second portion.

24. (Previously Presented) The method of claim 23 wherein depositing the passivation material comprises depositing a layer of silicon nitride on the first portion and then depositing on the silicon nitride a layer of silicon carbide.

25. (Previously Presented) The method of claim 23 further comprising fabricating, on the substrate, drop generator layers that provide for controlled expulsion of liquid, and wherein depositing the passivation material includes simultaneous deposition of the passivation material at a location away from the first portion to enable use of some of the passivation material at the locations other than the first and second portions as one of the drop generator layers.

26. (Previously Presented) The method of claim 23 further comprising depositing a layer of phosphosilicate glass at interfaces between the first portion and the second portion prior to depositing the passivation material on the first portion.